

REMARKS

Claim Rejections – 35 U.S.C §112

Claims 12, 16 and 35 stand rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. Examiner asserts that there is no support in the specification for a surfactant that is an aliphatic hydrocarbon.

Claims 12 and 16, as originally filed, disclose the use of ICI Hypermer E-464 as a polymeric dispersant. Claim 35, as originally filed, discloses both ICI Hypermer E-464 and ICI Hypermer A-60 as surfactant stabilizers. Furthermore, Page 8, lines 3-18 of the specification as originally filed discloses ICI Hypermer E-464 and ICI Hypermer A-60 as polymeric dispersants. As would be appreciated by one ordinarily skilled in the art, ICI Hypermer E-464 and ICI Hypermer A-60 are aliphatic hydrocarbons.

Therefore, Applicant respectfully submits that there is support in the specification for a surfactant that is an aliphatic hydrocarbon and that Claims 12, 16 and 35 are currently in condition for allowance. Reconsideration and withdrawal of the rejection is respectfully requested.

Claims 37 and 38 stand rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 37 and 38 have been amended. Applicant respectfully submits that Examiner's rejection is now moot and that Claims 37 and 38 are currently in condition for allowance.

Claim Rejections – 35 U.S.C. §103

Claims 1-11, 13-15, 17-34, and 36-38 stands rejected under 35 U.S.C. §103(a), as being unpatentable over Dubin (US 5,284,492).

For a §103 obviousness rejection to be proper, the Examiner must meet the burden of establishing that all elements of the invention are disclosed in the prior art; that the prior art relied upon, coupled with knowledge generally available in the art at the time of the invention, must contain some suggestion or incentive that would have motivated the skilled artisan to modify a reference or combined references; and that the proposed modification of the prior art must have had a reasonable expectation of success, determined from the vantage point of the skilled artisan at the time the invention was made. MPEP 2143.

Amended Claim 1 recites a high stability, low emission, invert fuel emulsion composition for an internal combustion engine comprising “... hydrocarbon petroleum distillate fuel as the continuous phase of the emulsion; and a coupling agent for maintaining phase stability at high temperatures and shear pressures in said internal combustion engine, wherein said emulsion has an average droplet size ranging from about 0.1 microns to about 1 micron.”

Dubin fails to disclose a fuel emulsion for an *internal combustion engine*, as recited in Claim 1. Instead, Dubin teaches “a fuel oil composition comprising an emulsion of water and a fuel which is used as a combustion fuel for a gas turbine.” (Col. 1, lines 13-19). Marks Standard Handbook for Mechanical Engineers (McGraw-Hill 10<sup>th</sup> edition) makes it clear that internal combustion engines and turbines are not the same by separating internal combustion engines from turbines and placing them in two separate chapters. As would be appreciated by one having ordinary skill in the art, the fuel delivery system for a turbine is fundamentally different from that of an internal combustion engine, making the requirements for fuel stability different. It is obvious that a fuel applicable in a gas turbine cannot be immediately assumed to work in an internal combustion engine. A good example of this is kerosene, which is commonly used in aviation gas turbines but will not burn in an internal combustion engine using

compression ignition. Therefore, any teachings of Dubin have no relation to the present invention, as one with ordinary skill in the art would not associate them readily.

Furthermore, Dubin fails to disclose a coupling agent for maintaining phase stability at high temperatures and shear pressures in the internal combustion engine, as recited in Claim 1. There is no mention of a coupling agent at all in Dubin, nor is there any suggestion or incentive that would motivate one skilled in the art to modify Dubin to include a coupling agent. Since Dubin relates to a turbine, not an internal combustion, there is no reason for including the coupling agent. Additionally, even if Dubin did include a coupling agent, it would not be, nor would there be any motivation for it to be, a coupling agent *for maintaining phase stability at high temperatures and shear pressures in an internal combustion engine*, since Dubin clearly only relates to turbines.

Since Claims 2-11, 13-15 and 17-19 depend from Claim 1, Applicant respectfully submits that Claims 2-11, 13-15 and 17-19 are also patentable as they contain the same limitations as Claim 1.

The same arguments made above with respect to the patentability of Claim 1 are applicable to the patentability of Claim 20 as well.

Since Claims 21-34 and 36-38 depend from Claim 20, Applicant respectfully submits that Claims 21-34 are also patentable as they contain the same limitations as Claim 20.

Applicant respectfully submits that Claims 1-11, 13-15, 17-34, and 36-38 are currently in condition for allowance. Reconsideration and withdrawal of the rejection is respectfully requested.

Claims 39 and 42 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Dubin, further in view of Genova et al. (US 5,259,851).

Since Claims 39 and 42 depend from Claim 20, Applicant respectfully submits that Claims 39 and 42 are also patentable as they contain the same limitations as Claim 20.

Furthermore, since Claims 39 and 42 depend from Claim 20, they require that the “emulsion has an average droplet size ranging from about 0.1 microns to about 1 micron.” Genova relates to emulsions which are “transparent.” (Col. 1, lines 45-51). As would be appreciated by one having ordinary skill in the art, emulsions that are clear or transparent are less than 0.1 microns. Therefore, it would not be obvious to modify Dubin with Genova in order to arrive at the present invention.

Applicant respectfully submits that Claims 39 and 42 are currently in condition for allowance. Reconsideration and withdrawal of the rejection is respectfully requested.

Claims 40-41 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Dubin and Genova, further in view of Wenzel (US 4,002,435).

Since Claims 40-41 depend from Claim 20, Applicant respectfully submits that Claims 40-41 are also patentable as they contain the same limitations as Claim 20.

Furthermore, since Claims 40-41 depend from Claim 20, they require that the “emulsion has an average droplet size ranging from about 0.1 microns to about 1 micron.” As discussed above, Genova relates to emulsions which are transparent. Wenzel also relates to emulsions that are “clear.” (Col. 1, lines 12-13). As mentioned above, emulsions that are clear or transparent are less than 0.1 microns, and do not satisfy the range of about 0.1 microns to about 1.0 microns, as required by Claim 20.

Therefore, it would not be obvious to modify Dubin with Genova and Wenzel in order to arrive at the present invention.

Applicant respectfully submits that Claims 40-41 are currently in condition for allowance. Reconsideration and withdrawal of the rejection is respectfully requested.

Claims 43 and 44 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Dubin and Genova, further in view of Schwab (US 5,669,938).

Since Claims 43 and 44 depend from Claim 20, Applicant respectfully submits that Claims 43 and 44 are also patentable as they contain the same limitations as Claim 20.

Furthermore, since Claims 43 and 44 depend from Claim 20, they require that the “emulsion has an average droplet size ranging from about 0.1 microns to about 1 micron.” As discussed above, Genova and Wenzel relate to emulsions which are transparent or clear, and therefore less than 0.1 microns. Therefore, it would not be obvious to modify Dubin with Genova or Wenzel in order to arrive at the present invention.

Applicant respectfully submits that Claims 43 and 44 are currently in condition for allowance. Reconsideration and withdrawal of the rejection is respectfully requested.

Claim 45 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Dubin and Genova, further in view of European Patent Application 475 620.

Since Claim 45 depends from Claim 20, Applicant respectfully submits that Claim 45 is also patentable as it contains the same limitations as Claim 20.

Furthermore, since Claim 45 depends from Claim 20, it requires that the “emulsion has an average droplet size ranging from about 0.1 microns to about 1 micron.” As

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discussed above, Genova relates to emulsions which are transparent. European Patent Application 475 620 also relates to emulsions that are "transparent." (Page 2, lines 1-2). As mentioned above, emulsions that are clear or transparent are less than 0.1 microns, and do not satisfy the range of about 0.1 microns to about 1.0 microns, as required by Claim 20. Therefore, it would not be obvious to modify Dubin with Genova or European Patent Application 475 620 in order to arrive at the present invention.

Applicant respectfully submits that Claim 45 is currently in condition for allowance. Reconsideration and withdrawal of the rejection is respectfully requested.

If the Examiner has any questions regarding this application, the Examiner may telephone the undersigned at 775-586-9500.

Respectfully submitted,  
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